15

POCKET CHECKLIST

WARNING LIGHTS
EMERGENCY PROCEDURES
DATA & LIMITATIONS

[N] APPLICABLE FOR NAVAL AIRCRAFT ONLY

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WARNING LIGHTS

CHANGES		
CHANGE NO.	DATE	PAGE NO.
2	3/87	W-32 W-1A

ALTRN 1+2

TR 1+2 LIGHTS COME ON SIMULTANEOUSLY + HORN

MEANING:

- BOTH ALTERNATORS INOP
- THE BATTERY IS ONLY ELECTRICAL POWER SOURCE
- DC-2 BUS AUTOMATICALLY DISENGAGES (ARMAMENT).
- PUSHBUTTONS POP OUT
- FUEL BOOST AND TRANSFER PUMPS INOP
- INVERTER AUTOMATICALLY COMES ON TO POWER EMERGENCY AC BUS (PUSHBUTTONS)

(Continued)

ACTIONS:

* 1. **A/B** -- SHUT DOWN: RELIGHT IMPOSSIBLE
2. **RPM** -- REDUCE
3. **RADAR, HUD** -- OFF
4. **LOAD REDUCT** -- ON (IFF, WEAPONS)
* 5. **PUSHBUTTONS** -- RE-ENGAGE
6. DESCEND FOR LANDING AT NEAREST BASE
* 7. **ALTERNATOR SWITCHES** -- "OFF – RESET" AND ON.

IF ALTRN LIGHTS STILL ON:

8. **ALTERNATOR SWITCH** -- OFF
9. **BTC 1+2 C/B** -- PULL
10. **ALTERNATOR SWITCHES** -- ON

(Continued) ►

(Continued)

IF ONE ALTRN LIGHT OUT:

11. PROCEED ACCORDING TO ALTRN FAIL PROCEDURE
12. **LOAD REDUCT** -- OFF

IF ALTRN LIGHTS STILL ON:

13. **NON-ESSENTIAL ELECTRICAL CONSUMERS** -- OFF (PITOT HEAT, EMERGENCY HORIZON - DEPENDING ON WEATHER).

ANTICIPATE TOTAL ELECTRICAL FAILURE:

1. **RADIO** -- INFORM CONTROL TOWER
2. **LANDING GEAR** -- DOWN, ACCORDING TO RANGE/FUEL

(Continued)

(Continued)

3. **BATT** -- OFF, ACCORDING TO WEATHER: PUSHBUTTONS WILL POP OUT.
4. **STOPWATCH** -- OPERATE FOR FUEL ESTIMATION
5. **THROTTLE** -- OPERATE SLOWLY, AVOID NEGATIVE "g".

CAUTION

IN CASE OF FLAMEOUT:
BATT -- ON IMMEDIATELY TO ENABLE RELIGHT.

IN THE PATTERN:

1. ***BATT*** *-- ON*
2. ***PUSHBUTTONS*** *-- IN*

(Continued)

ESSENTIAL CONSUMERS

EMERGENCY AC BUS	MANUAL LOAD REDUCTION – BUS
– EMERGENCY HORIZON – ENGINE INDICATORS (EGT, OIL PRESS., OIL QTY, F/F) – FUEL QTY & 600 LT WARNING – STAB AUG – ECS – COMPASS & ADF (HSI)	– IFF – SEVERAL LIGHTS – WEAPON & ECM – ROLL STAB.

TR-1 + 2

MEANING:

- BOTH TR UNITS FAILED
- DC POWER SUPPLIED BY THE BATTERY ONLY
- DC-2 BUS AUTOMATICALLY DISCONNECTS (ARMAMENT)

ACTIONS:

* 1. **A/B** -- CUT OFF
* 2. **TR-1 + 2 SWITCHES** -- "OFF - RESET" AND "ON"

◄ (Continued)

(Continued)

IF ONE TR LIGHT OUT:

3. CHECK OPERATING TR POWERS ALL DC BUSES
4. CONTINUE ACCORDING TO TR FAILURE

IF BOTH TR LIGHTS STILL ON:

- BATT IS THE ONLY DC POWER SOURCE

5. **LOAD REDUCT** -- ON (IFF, WEAPON)
6. **"DC CONTR" C/B** -- CHECK IN
7. **NON-ESSENTIAL ELECTRIC CONSUMERS** -- OFF
8. **RADAR, HUD** -- OFF

(Continued)

8. RETURN TO LANDING
9. **RADIO** -- INFORM TOWER
10. **BATT** -- OFF, ACCORDING TO WEATHER
11. **STOPWATCH** -- OPERATE FOR FUEL ESTIMATION

CAUTION

IN CASE OF FLAMEOUT:

BATT -- ON IMMEDIATELY TO ENABLE RELIGHT.

IN THE PATTERN:

12. **BATT** -- ON

TR-2

MEANING:
- TR-2 INOP
- TR-1 SHOULD ALSO POWER THE DC 1-2 BUS

ACTIONS:

1. **TR-2 SWITCH** -- OFF RESET AND ON

IF TR-2 LIGHT STILL ON:

2. **TR-2 SWITCH** -- OFF
3. **RED RADIO** -- CHECK FOR OPERATION (SQUELCH)

IF RED RADIO OPERATIVE:

- TR-1 ALSO POWERS DC1-2 AND DC-2 BUSES. FLIGHT CAN BE CONTINUED:

(Continued)

IF RED RADIO IS NOT OPERATIVE

4. **DC CONTR C/B** -- PULL
5. **RED RADIO** -- CONFIRM OPERATIVE, FLIGHT CAN BE CONTINUED.

IF RED RADIO STILL INOP:

- DC 1-2 AND DC-2 BUSES ARE NOT POWERED.
- IFF AND WEAPON ARE INOP.
- RETURN TO LANDING

BINGO

MEANING: FUEL DETOTALIZER REACHES THE QUANTITY SELECTED IN BINGO.

ACTION: BINGO SELECTOR - TURN TO NEXT DESIRED BINGO WARNING.

TR-1

MEANING:

- TR-1 INOP
- TR-2 SUPPOSED TO POWER DC 1-1 BUS

ACTIONS:

★1. **TR-1 SWITCH** -- OFF RESET AND ON

IF TR-1 LIGHT STILL ON:

2. **TR-1 SWITCH** -- OFF
3. **BATT** -- OFF

(Continued)

IF TR-1 LIGHT STILL ON:

- DC 1-1 IS POWERED BY TR-2

4. **BATT** -- ON
5. COMBAT FLIGHT CAN BE CONTINUED

IF TR-1 LIGHT OFF OR FLASHING:

1. **DC CONTR C/B** -- PULL

IF TR-1 LIGHT ON:

1. **BATT** -- ON
2. COMBAT FLIGHT CAN BE CONTINUED

(Continued) ►

IF TR-1 LIGHT STILL OFF OR FLASHING:

- DC 1-1 BUS IS POWERED BY THE BATT ONLY.

1. RETURN TO LANDING
2. **BATT SWITCH** -- "OFF" UNTIL ENTERING THE PATTERN (IF WEATHER PERMITS)
3. **NON-ESSENTIAL CONSUMERS** -- OFF

   PITOT HEAT, EMERGENCY HORIZON -- ACCORDING TO THE WEATHER

- GREEN RADIO INOP.

CAUTION

IN CASE OF FLAMEOUT

BATT -- "ON" IMMEDIATELY TO ENABLE RELIGHT.

IN THE PATTERN. **BATT** -- "ON"

ALTRN-2

MEANING:

- ALTRN-2 INOP
- ALTRN-2 IS DISCONNECTED FROM AC-2 BUS.
- ALTRN-1 SUPPOSED TO FEED AC-2 BUS.
- AUTOMATIC LOAD REDUCTION BUSES WILL DISCONNECT (RIGHT FUEL TRANSFER PUMP INOP).
- PUSHBUTTONS MIGHT POP OUT.

(Continued)

ACTIONS:

* 1. **A/B** -- OFF
* 2. **PUSHBUTTONS** -- RE-ENGAGE
* 3. **ALTRN-2** -- "OFF - RESET" AND "ON"

IF ALTRN-2 STILL ON OR MOMENTARILY OFF AND ON AGAIN:

- RIGHT FUEL TRANSFER PUMP INOP., ASYMMETRIC FUEL TRANSFER IS ANTICIPATED (MAINLY IF USING A/B).

4. **ALTRN-2 SWITCH** -- "OFF"
5. **INTERCONNECT VALVE** -- OPEN
6. **TR-2 LIGHT** -- CHECK

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(Continued)

IF TR-2 LIGHT OFF:

- ALTERNATOR-1 IS FEEDING AC-2 BUS.
- COMBAT FLIGHT CAN BE CONTINUED.

IF TR-2 LIGHT ON:

- ALTERNATOR-1 DOES NOT FEED AC-2 BUS.
- LEFT AND RIGHT FUEL TRANSFER PUMPS ARE INOP
- RIGHT FUEL BOOST PUMP DOES NOT OPERATE.

6. AVOID A/B OPERATION
7. **PUSHBUTTONS** -- CHECK IN
8. RETURN TO LANDING

ALTRN-1

MEANING:

- ALTRN-1 INOP
- ALTERNATOR-1 DISCONNECTED FROM AC-1 BUS

  ALTERNATOR-2 WILL FEED AC-1 BUS
- AUTOMATIC AC LOAD REDUCTION BUSES WILL OPERATE (RIGHT FUEL TRANSFER PUMP INOP)
- PUSHBUTTONS MIGHT POP

ACTIONS:

*1. **A/B** -- "OFF"
*2. **PUSHBUTTONS** -- RE-ENGAGE
*3. **ALTRN-1 SWITCH** -- "OFF-RESET" AND "ON"

(Continued) ►

(Continued)

IF ALTRN-1 STILL ON OR MOMENTARILY OFF AND ON AGAIN:

- RIGHT FUEL TRANSFER PUMP INOP. ASYMMETRIC FUEL TRANSFER IS ANTICIPATED (MAINLY IF USING A/B)

4. **INTERCONNECT VALVE** -- OPEN
5. **ALTRN-1 SWITCH** -- "OFF"
6. **TR-1 LIGHT** -- CHECK

IF TR-1 LIGHT OFF:

- ALTERNATOR-2 FEEDS AC-1 BUS
- COMBAT FLIGHT CAN BE CONTINUED

(Continued)

IF TR-1 LIGHT ON:

- ALTERNATOR-2 DOES NOT FEED AC-1 BUS.
- LEFT FUEL BOOST PUMP INOP
- INVERTER WILL AUTOMATICALLY FEED EMERGENCY AC BUS.

6. **PUSHBUTTONS** -- CHECK IN
7. RETURN TO LANDING

BATT

MEANING: BATTERY IS DISCONNECTED FROM DC 1-1 BUS.

ACTIONS:

*1. **BATT SWITCH** -- "OFF-RESET" AND "ON"

IF BATT LIGHT STILL ON:

2. RETURN TO LANDING

OIL PRESS

MEANING: OIL PRESSURE BELOW 10±2 PSI

THIS IS A SEVERE MALFUNCTION – LAND IMMEDIATELY.

ACTIONS:

★1. **HEADING** -- TO THE NEAREST BASE, PERFORM FORCED LANDING PATTERN.

★2. **THROTTLE:**

A. IF ALTITUDE PERMITS FORCED LANDING PATTERN: REDUCE TO 85-90% RPM, AVOID UNNECESSARY CHANGES.

(Continued)

B. IF ALTITUDE IS NOT SUFFICIENT FOR FORCED LANDING:

CONSIDER USE OF MAX A/B TO GAIN ALTITUDE ACCORDING TO DISTANCE FROM BASE.

3. **MONITOR OIL PRESSURE INDICATOR:**

A. WITH OIL PRESSURE "O" YOU HAVE (UNTIL ENGINE SEIZES):

1) 4–5 MINUTES OF FLIGHT AT 85–95% RPM (THRUST LOWER THAN NORMAL AS RESULT OF AN OPEN NOZZLE)

2) 1 MINUTE AT MIL OR A/B POWER

B. WITH SEIZED ENGINE:

LANDING GEAR CANNOT BE EXTENDED, THE HYDRAULIC EMERGENCY PUMP IS THE ONLY SOURCE TO POWER THE CONTROLS IN ORDER TO ACHIEVE SAFE EJECTION ATTITUDE.

OIL QTY

MEANING: OIL QUANTITY IS LESS THAN 16 PINTS

NOTE

REASON MIGHT BE HIGH ANGLE OF ATTACK OR NEGATIVE "g".

ACTIONS:

1. RETURN TO LEVEL FLIGHT, MONITOR THE WARNING AND QUANTITY INDICATOR.

IF WARNING STILL ON, AND QTY LESS THAN 16 PINTS:

2. **THROTTLE** -- REDUCE TO 85-90%

(Continued)

*3. RETURN TO NEAREST BASE FOR SAFETY PATTERN.
4. AVOID THROTTLE MOVEMENTS.
5. IF OIL QTY CONTINUES TO DROP:
   A. PLAN FOR A FORCED LANDING
   B. CONSIDER THE USE OF MAX A/B TO GAIN ALTITUDE ACCORDING TO DISTANCE FROM BASE.

NOTE

WITH LESS THAN 7 PINTS, EXPECT UNCONTROLLED OPENING OF THE NOZZLE AND LOSS OF THRUST. EXPECT DIFFICULTIES ON A/B IGNITION.

* WHEN OIL QUANTITY IS APPROX ZERO, OIL PRESSURE WILL DROP AND THE OIL PRESS WARNING WILL COME ON.

UTIL ISO

MEANING:

- UTILITY ISOLATION WAS AUTOMATICALLY OPERATED, OR UTIL ISO SWITCH IS NOT IN "AUTO".

CONSEQUENCE:

- OPERATION OF ANY UTILITY CONSUMER WILL REDUCE UTILITY PRESSURE AND EMPTY THE ACCUMULATOR
- IMPOSSIBLE TO EXTEND THE LANDING GEAR IN THE NORMAL MODE

ACTIONS:

1. DO NOT USE SPEED BRAKES
2. **UTIL PRESS** -- CHECK
3. **UTIL ISO SWITCH** -- CHECK "AUTO".
   IF SO -
4. RETURN TO LANDING AND PROCEED AS IN HYD-1 MALFUNCTION.

(Continued)

5. EXTENDING LANDING GEAR:
   CHECK UTIL ISO WARNING:
   A. NO WARNING: EXTEND THE GEAR NORMALLY

NOTE
THE WARNING COULD BE CAUSED BY FALSE ALARM.

   B. WARNING STILL ON: EMERGENCY EXTENSION.
   EMERGENCY GEAR HANDLE -- PULL, WAIT FOR 3 GREEN LIGHTS + 1 RED LIGHT

6. AFTER TOUCHDOWN:
   UTIL ISO SWITCH -- "OPEN"
   (TO ENABLE BRAKING WITH THE REMAINING HYD FLUID).

HYD EMERG

MEANING:
- EMERG SYSTEM PRESSURE LESS THAN 90 BAR
- IF WARNING COMES AFTER HYD-1 -- DASHPOT AND OSCAR ARE INOP.

ACTIONS:

1. **"EMERG HYD PUMP" C/B** -- CHECK IN.
   IF C/B IN -- PULL IT OUT.
2. RETURN TO LANDING.

HYD-2

MEANING:

- HYD-2 PRESSURE LESS THAN 140 BAR
- STAB-AUG DISCONNECTED
- DEGRADATION IN CONTROL EFFICIENCY
- EMERGENCY GEAR EXTENSION INOP.

ACTIONS:

* 1. **PUSHBUTTONS** -- PULL OUT
* 2. **RETURN TO LANDING** -- MONITOR HYD-1 PRESS.
* 3. **DO NOT EXCEED "NO STAB AUG" FLIGHT LIMITS**
* 4. **LANDING GEAR** -- EXTEND IN NORMAL MODE AS SOON AS PRACTICABLE.

(Continued)

5. LANDING:
   A. **PATTERN** -- WIDE
   B. **FINAL** -- LONG AND SHALLOW

   DURING THE FLARE THERE WILL BE A LACK OF ELEVATOR CONTROL -- INCREASE AIRSPEED BY 5-10 KNOTS.

IF HYD-1 WARNING ALSO ON:

1. **EXTENDING OF THE LANDING GEAR IS NOT ASSURED.**
2. **EMERGENCY HYDRAULIC ELECTRICAL PUMP IS THE ONLY SOURCE TO POWER THE CONTROLS** -- USE SMALL AND SLOW CONTROL INPUTS.

(Continued)

3. LANDING:

   A. **IF THE GEAR IS DOWN AND LOCKED** -- PERFORM WIDE PATTERN WITH LONG AND SHALLOW FINAL.

   B. **IF THE GEAR IS NOT LOCKED** -- LANDING AT PILOT'S DISCRETION

   C. EXTEND THE GEAR IN THE NORMAL MODE:
   IF THE GEAR IS NOT LOCKED -- PULL EMERGENCY HANDLE

WARNING

IF ONE OF THE TWO MAIN LANDING GEARS IS NOT DOWN AND LOCKED -- **EJECT!**

HYD-1

MEANING:

- HYD-1 PRESSURE LESS THAN 140 BAR. WHEN IN THE HYD-1 POSITION THE INDICATOR READS EMERGENCY PUMP PRESSURE.
- DEGRADED CONTROLS EFFICIENCY.
- USING ANY OF THE UTILITY CONSUMERS WILL REDUCE UTIL PRESSURE.

ACTIONS:

*1. DO NOT USE SPEED BRAKES.

*2. **UTIL ISO SWITCH** -- "CLOSE"

3. RETURN TO LANDING ON A BARRIER EQUIPPED RUNWAY.

*4. **EMERGENCY LANDING GEAR HANDLE** -- PULL AS SOON AS PRACTICABLE. CHECK 3 GREEN LIGHTS AND 1 RED -- **NORMAL GEAR HANDLE** - DOWN

[N] ▪ BIP CHECK: **EMERGENCY GEAR HANDLE** -- IN. AFTER BIP CHECK -- PULL HANDLE BACK PULL "U/C COMD" C/B.

(Continued)

5. **"ANTI SKID" SWITCH** -- OFF

6. ON FINAL
   A. **"AURAL WARN" SWITCH** -- OFF
   B. CALL FOR BARRIER.

7. AFTER TOUCHDOWN:
   A. **ENGINE** -- SHUT DOWN
   B. **"UTIL ISO" SWITCH** -- "OPEN"

8. **BRAKING** -- EMERGENCY BRAKES
   MAINTAIN RUNWAY HEADING -- BY NORMAL BRAKES

CAUTION

WHEN "UTIL" PRESSURE IS ZERO
DO NOT DEPLOY THE DRAG CHUTE
WHEN CROSSWIND EXCEEDS -10 KT.

REG O_2

MEANING: BLINKER IS STEADY FOR MORE THAN 18 SECONDS

ACTIONS:

*1. INHALE DEEPLY SEVERAL TIMES
*2. **CONNECTIONS** -- CHECK
3. **BLINKER** -- CHECK:
   A. STEADY BLACK
      1) **"OXY" C/B** -- CHECK
      2) IF NO CHANGE -- TURN SELECTOR TO EMERG. DO NOT FLY ABOVE 40,000 FT.

   B. STEADY WHITE
      1) CONTINUOUS OXYGEN LEAK -- **MALFUNCTION CANNOT BE CORRECTED**
      2) DO NOT TURN TO EMERG.

(Continued)

C. OPERATING NORMALLY – **FALSE WARNING, MASTER CAUTION** -- PRESS TO SHUTOFF AURAL WARNING:

8 MIN O_2

MEANING:
- OXYGEN PRESSURE IN EMERGENCY ACCUMULATOR BELOW 135 BAR. OXYGEN LEFT IS SUFFICIENT FOR 8 MINUTES
- AND/OR VISOR VALVE CLOSED
- AND/OR EMERGENCY OXYGEN VALVE NOT FULLY OPEN

ACTIONS:

* 1. CHECK QUANTITY AND BOTH SELECTORS IN NORMAL
* 2. DESCEND BELOW 10,000 FT CABIN ALTITUDE
* 3. RETURN TO LANDING
4. WHEN EMERGENCY OXY BOTTLE BECOMES EMPTY BREATHING IS IMPOSSIBLE. IN THIS CASE -- REMOVE PEG CONNECTING HIGH ALTITUDE SUIT TO CHEST VALVE OR REMOVE MASK.

MACH

MEANING: TOTAL TEMP ABOVE LIMIT

ACTIONS:

1. BELOW 30,000 FEET:
   AIRSPEED -- REDUCE UNTIL WARNING IS OFF

1. ABOVE 30,000 FEET:
   FLIGHT LIMITATIONS PERMIT CONTINUING:-
   - 0.2 MACH ABOVE WARNING INITIATION
   - 2 MINUTES

   WHATEVER COMES FIRST

EQUIP TEMP

MEANING: TEMP IN THE AVIONICS COMPARTMENTS EXCEEDS LIMITATIONS, OR INSUFFICIENT AIRFLOW INTO THESE COMPARTMENTS, OR HOT AIR LEAK FROM THE SYSTEM.

ACTIONS:

* 1. **PRESSURIZATION MAIN SW.** -- VERIFY ON
* 2. **THROTTLE** -- ADVANCE
3. **AIRSPEED** -- INCREASE

IF WARNING STILL ON AFTER 1 MIN:

4. **RADAR, HUD** -- OFF
5. RETURN TO LANDING.

CABIN PRESS

MEANING: CABIN ALTITUDE ABOVE 30,000 FT (OR MALFUNCTION IN THE MICROSWITCH OF CANOPY LOCKING WARNING SYSTEM)

ACTIONS:

WARNING

ABOVE 30,000 FT DO NOT MANIPULATE ECS AND CANOPY CONTROLS.

1. IF "ECS OT" WARNING IS ALSO ON:
* **ECS OVERRIDE SWITCH** -- ON

(Continued)

* 2. **CABIN ALTITUDE** -- CHECK
* 3. DESCEND BELOW 30,000 FT
* 4. **OXY** -- 100%
5. CHECK:
   A. **PRESSURIZATION SWITCH** -- ON
   B. **CANOPY HANDLE** -- FULLY FORWARD
   C. **CANOPY SEAL HANDLE** -- FORWARD

6. DURING THE DESCENT THE CANOPY MAY BE FOGGED, **CONSIDER USE OF RAMAIR FOR DEFOG.**

CABIN PRESS

ECS OT

MEANING:

- HIGH TEMP OF THE AIR ENTERING THE ECS.
- MAIN PRESSURIZATION VALVE AUTOMATICALLY CLOSED

ACTIONS:

1. **AIRSPEED** -- REDUCE, **RETURN TO LANDING.**
2. **CABIN ALTITUDE** -- CHECK

   IF CABIN ALTITUDE ABOVE 30,000 FT (CABIN PRESS. WARNING ON):

3. **ECS OVERRIDE SWITCH** -- ON (MAIN PRESSURIZATION VALVE WILL OPEN BUT "ECS OT" WARNING WILL BE ON UNTIL INLET TEMP. DECREASES)

(Continued)

4. BELOW 20,000 FEET:
ECS OVERRIDE SWITCH -- OFF

IF "ECS OT" WARNING STILL ON:

RADAR, HUD -- OFF. (NO AIRCONDITIONING IS AVAILABLE)

NOTE

BELOW 20,000 *"ECS OT" WARNING* MOMENTARILY COMES ON:

- **OVERRIDE SWITCH** -- ON AND BACK TO OFF
- **IF WARNING OFF** -- CONTINUE FLIGHT

FUEL-PRESS.

MEANING:

- ENGINE INLET FUEL PRESSURE LOW
- ONE OR BOTH BOOST PUMPS INOP
- INVERTED FLIGHT FUEL ACCUMULATOR IS EMPTY
- SUBSONIC FLIGHT BELOW 40,000 FEET UPTO MIL POWER IS PERMITTED
- AVOID RAPID THROTTLE MOVEMENTS, A/B OPERATION AND NEGATIVE "g"

WARNING

A/B OPERATION AND/OR NEGATIVE "g" MIGHT CAUSE ENGINE FLAMEOUT.

ACTIONS:

* 1. **A/B** -- OFF, **RPM** -- REDUCE
* 2. DESCEND
* 3. **FUEL PUMPS C/B AND SWITCHES** -- CHECK ON
* 4. **FUEL "INTERCON" VALVE** -- OPEN
5. RETURN TO LANDING, OPERATE THROTTLE GENTLY
6. AVOID GO AROUND IF POSSIBLE

600 L

MEANING: FUEL LEVEL IN ONE OF THE FUSELAGE TANKS IS LESS THAN 300 LITERS.

ACTIONS:

*1. **FUEL QUANTITY** -- CHECK
2. IF FUEL QUANTITY 600L:
   *A. **A/B** -- OFF
   *B. **FUEL INTERCON VALVE** -- OPEN
   C. **RETURN TO LANDING, USE ECONOMY POWER**

STAB AUG

MEANING: ONE OR BOTH STAB-AUG PUSHBUTTONS (Y, P) DISENGAGED.

ACTIONS:

1. **HYD-2 PRESSURE** -- CHECK
2. **IF BOTH PUSHBUTTONS POPPED** -- CHECK "SERVO COMD" C/B.
3. IF HYD-2 OK:
   TRY TO RE-ENGAGE PUSHBUTTONS:

   A. "P" PUSHBUTTON - ENGAGE LIMITS
      1) **PITCH TRIM** -- NEUTRAL (LIGHT OFF)
      2) **STICK** -- NEUTRAL
      3) **ALTITUDE** -- ABOVE 5000 FT

   B. NO ENGAGE LIMITS FOR "Y" PUSHBUTTON

FLIGHT LIMITATION WITH "P" PUSHBUTTON DISENGAGE

- **MAX ALTITUDE** -- 50,000 FT
- **MAX AIRSPEED** -- 500 KTS
- **DECELERATION TO SUBSONIC FLIGHT** -- AT ONE "g" AND BELOW 40,000 FEET
- ELEVATOR EFFECTIVENESS ON LANDING WILL BE DEGRADED. PERFORM SHALLOW APPROACH. ADD 10 KTS TO THRESHOLD SPEED.

SPARE	SPARE	STAB AUG	SPARE

FUEL TRANSF

(THIS WARNING COMES ON WHENEVER ONE OR BOTH WING TANKS END-OF-TRANSFER LIGHTS COME ON)

MEANING:

- WING FUEL TANK EMPTY
- NO FUEL TRANSFER FROM THE WING
- FUEL TRANSFER PUMP INOP

ACTIONS:

*1. **FUEL QUANTITY** -- CHECK

   A. **AT NORMAL TRANSFER CONDITION** -- ABOVE 1560L – ASYMMETRIC FUEL TRANSFER

   B. **AT FORWARD FIRST CONDITION** -- ABOVE 1100L – ASYMMETRIC FUEL TRANSFER

2. **FUEL BOOST PUMP SWITCHES AND C/B** -- CHECK ON
3. **ALTERNATOR WARNING LIGHTS** -- CHECK OFF

(Continued)

IF FUEL QUANTITY INDICATORS BECOME UNEVEN:

1. **FUEL "INTERCON" VALVE** -- OPEN
2. RELY ON FUEL QUANTITY INDICATORS ONLY (FUEL MAY BE TRAPPED IN THE WING).

PITOT HEAT

MEANING: PITOT HEAT SYSTEM IS INOP. (MAY CAUSE AN AOA MALFUNCTION).

ACTIONS:

1. **PITOT HEAT SWITCH AND C/B** -- CHECK ON
2. **DO NOT FLY INTO KNOWN ICING CONDITIONS (CLOUDS ETC.) IN COLD WEATHER** -- DESCEND TO AVOID PITOT ICING.
3. **IF CHASE IS NOT AVAILABLE** -- PERFORM "LANDING WITH AIRSPEED INDICATOR INOP" PROCEDURE.

ANTI-SKID

MEANING: ANTI-SKID DISENGAGED

ACTIONS:

1. **ANTI-SKID SWITCH** -- CHECK ON
2. **PADDLE SWITCH/ANTI -SKID DISENGAGE** -- NOT PRESSED

IF ANTI-SKID WARNING LIGHT IS STILL ON:

3. **ANTI-SKID SWITCH** -- OFF
4. LAND NORMALLY
5. BRAKE GRADUALLY
6. **ON A WET RUNWAY** -- SHUT DOWN THE ENGINE IN CASE OF SKIDDING

(Continued)

ANTI-SKID MALFUNCTION WITHOUT WARNING

SYMPTOMS: ONE OR BOTH BRAKES DO NOT RESPOND

ACTIONS:

1. **PADDLE SWITCH/ANTI-SKID DISENGAGE LEVER** -- PRESS (WARNING WILL COME ON) **AND BRAKE GRADUALLY**

IF BRAKE STILL DOES NOT RESPOND:

2. **EMERGENCY BRAKE HANDLE** -- PULL

WARNING

EMERGENCY BRAKES MUST BE USED IN STEPS: "PULL AND WAIT", WITH EXTREME CAUTION, TO AVOID TIRES BLOWING OUT.

HUD

MEANING: OVERTEMPERATURE IN THE HUD

NOTE

ONE OF THE WARNING LIGHTS ON THE PDU WILL ALSO COME ON

ACTIONS:

1. **HUD** -- OFF

AFTER SEVERAL MINUTES:

2. **HUD** -- ON

IF WARNING PERSISTS:

3. **HUD** -- OFF

NOTE

SECONDARY RED FIXED SIGHT MAY BE USED.

RADAR

MEANING: RADAR MALFUNCTION

NOTE

RADAR "FAIL" WARNING LIGHT ON THE RADAR CONTROL PANEL ALSO COMES ON.

ACTIONS:

1. **FAIL LIGHT/RESET BUTTON** -- PRESS TO RESET

IF NO CHANGE -- RADAR OFF

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EMERGENCY PROCEDURES

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LANDING WITH AIRSPEED INDICATOR INOPERATIVE

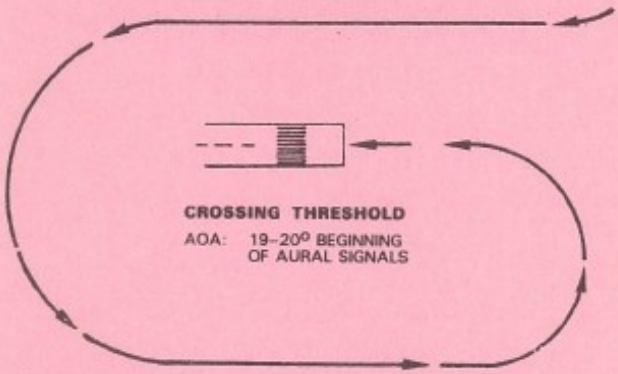
CALL FOR ANOTHER A/C ASSISTANCE. IF NOT AVAILABLE -- PERFORM THE FOLLOWING PATTERN:

TURN DOWNWIND

- AOA: 8 – 10°
- SPEED BRAKES: AS REQUIRED

INITIAL POINT

- ALT: MAINTAIN 2000 FT
- RPM: 83%
- AOA: 8°



DOWNWIND

- ALT: 2000 FT
- LDG GEAR EXTEND
  AOA: 10–11°
- RPM: 83 – 85%

TURNING FINAL

- BANK: ≈ 30°
- AOA: 16 – 17°
- RPM: ≈ 83%

NOTES

IF POSSIBLE, LAND ON A BARRIER – EQUIPPED RUNWAY.

THE ABOVE DATA IS FOR CLEAN CONFIGURATION WITH 1000L FUEL REMAINING

TOTAL ELECTRICAL FAILURE

SYMPTOMS:

1. NO HUD
2. NO ECS
3. "OFF" FLAGS ON ADI AND EGT
4. NO COMMUNICATIONS
5. NO COCKPIT LIGHTS
6. FUEL DETOTALIZER REMAINS AT LAST READING

MEANING:

1. THE FOLLOWING ITEMS ARE INOPERATIVE:
   - AIR START
   - COMMUNICATION
   - FUEL BOOST & TRANSFER PUMPS
   - ENG. INDICATORS (EXCEPT RPM)
   - CONT AUG
   - TRIMS
   - AOA
   - AIR CONDITIONING
   - NORMAL LANDING GEAR EXTENSION
   - ANTI-SKID
   - FUEL INDICATIONS
   - PITOT HEAT
   - FUEL INDICATION LIGHTS
   - LANDING GEAR LIGHTS
2. THE FOLLOWING ITEMS REMAIN IN LAST POSITION: SPIKES, AIR BRAKES, FUEL INTERCONNECT VALVE
3. THE FOLLOWING ITEMS CONTINUE TO OPERATE:
   - FLIGHT INSTRUMENTS
   - RPM INDICATOR
   - EMERGENCY COMPASS
   - FUEL TRANSFER (WITHOUT INDICATION)
   - EMERGENCY LIGHT
   - LANDING GEAR EMERGENCY EXTENSION
   - DRAG CHUTE
   - BRAKES (WITHOUT ANTI-SKID)
   - STORES & CANOPY JETTISON
   - EJECTION SEAT

(Continued)

ELECTR. FAILURE

ACTIONS:

*1. **A/B** -- OFF. RETURN TO LANDING.
*2. **THROTTLE** -- OPERATE GRADUALLY, AVOID NEGATIVE "g"
*3. **STOPWATCH** -- TAKE TIME FOR FUEL CONSUMPTION ESTIMATION
*4. **TRY TO RESET** -- BATT AND ALTERNATORS

IF MALFUNCTION PERSISTS:

5. **ENTER THE TRAFFIC PATTERN - "NO RADIO" PROCEDURE**
6. **EMERGENCY LANDING GEAR HANDLE** - PULL - LISTEN FOR LOCK CLICKS - NORMAL LANDING GEAR -- DOWN
7. **TRAFFIC PATTERN** -- EXTEND, LOOK FOR TOWER SIGNALS
8. AVOID GO-AROUND
9. **LANDING** -- NORMAL, BRAKING - WITHOUT ANTI-SKID

NOTES

* IF SPEED BRAKES REMAIN EXTENDED (MAY BE OBSERVED BY MIRRORS) -- INCREASE APPROACH SPEED BY 10 KT.

* IF AIRSPEED INDICATOR SUSPECTED UNRELIABLE (NO PITOT HEAT) -- CALL FOR ANOTHER A/C ASSISTANCE ACCORDING TO "NO RADIO" PROCEDURE.

COMPRESSOR STALL

SYMPTOMS:

1. COMPRESSOR STALL – A SINGLE OR A FEW "BANGS" FROM THE ENGINE, MAY CAUSE ENGINE FLAMEOUT.
2. RPM HANGUP – ENGINE DOES NOT RESPOND TO THROTTLE MOVEMENTS, EXCESSIVE EGT, NOZZLE AT "OPEN", LOSS OF THRUST.

*1. **THROTTLE** -- IDLE
*2. **AOA** -- REDUCE
AIRSPEED -- INCREASE TO 300 KT
3. **THROTTLE** -- ADVANCE GRADUALLY AND MONITOR RPM, EGT AND NOZZLE

IF STALL PERSISTS:

*4. **AIR START** -- ACTIVATE
*5. **THROTTLE** -- CUTOFF, ALLOW RPM TO DROP 3–5% AND ADVANCE TO IDLE.
MONITOR F/F, RPM, EGT AND NOZZLE.

IF STALL PERSISTS:

*6. **THROTTLE** -- CUTOFF
*7. PERFORM COMPLETE AIR START PROCEDURE.

AFTER ENGINE STABILIZES AT IDLE (RPM ABOVE 65%):

8. **THROTTLE** -- ADVANCE GRADUALLY AND MONITOR RPM, EGT AND NOZZLE
9. RETURN TO LANDING IN A SAFETY PATTERN

(Continued)

IGV OPEN

SYMPTOMS: WHEN RETARDING THROTTLE FROM MILITARY, ENGINE VIBRATES BELOW 90% RPM.

ACTIONS:

*1. DO NOT MOVE THROTTLE
*2. **RPM L/U** -- "MAN" ON
3. RETURN TO LANDING
*4. USE THROTTLE TO CONTROL THRUST (NOZZLE)
5. PERFORM APPROACH AND LANDING WITH RPM L/U ON.
6. **AFTER TOUCHDOWN** -- ENGINE CUTOFF.

WARNING

WITH IGV OPEN, IT IS IMPOSSIBLE TO START A FLAMED OUT ENGINE.

LOSS OF POWER

LOSS OF POWER

SYMPTOMS:

1. LOW POWER AT MILITARY
2. NOZZLE – "OPEN"
3. EGT 400°C AND BELOW

MEANING: **NOZZLE FAILED OPEN**

NOTE

WITH THROTTLE AT MILITARY, THE THRUST IS EQUAL TO NORMAL ENGINE AT 85%.

ACTIONS:

*1. **LANDING GEAR – RETRACT SPEED BRAKES** -- IN
*2. **THROTTLE** -- ADVANCE RAPIDLY TO MAX A/B (LIGHT OFF WITHIN 15 SEC)
*3. **AIRSPEED** -- INCREASE TO 260 KT

IF A/B DOES NOT LIGHTOFF:

*4. EXTERNAL STORES – JETTISON, EXCEPT MISSILES
*5. **THROTTLE** -- BACK TO MILITARY
6. CLIMB AT 260KT TO 3000–3500 FEET TO BASE LEG POINT
7. **LANDING GEAR** -- EXTEND ON TURN TO BASE LEG
8. MAINTAIN 220KT UNTIL THRESHOLD.
9. AIM TO OVERSHOOT.
10. CALL FOR BARRIER.
11. **WARNING HORN** -- DISCONNECT
12. **AFTER TOUCHDOWN** -- ENGINE CUTOFF.

NOTE

WITH MILITARY, THE THRUST IS SUFFICIENT TO CRUISE AT 20,000 FEET, CLEAN CONFIGURATION.

NO MISSED APPROACH CAPABILITY WITH LANDING GEAR DOWN.

POSSIBILITIES FOR IGNITING AFTER BURNER INCREASE WITH ALTITUDE DECREASE. ABOVE 15,000 FEET POSSIBILITIES FOR IGNITING AFTER BURNER DIMINISH.

IGV JAMMED CLOSED

SYMPTOMS:

1. SEVERE LOSS OF POWER AT MILITARY AND A/B
2. NOZZLE OPEN SLIGHTLY MORE THAN NORMAL
3. LOW F/F, APPROX 1/3 OF NORMAL
4. EGT – NORMAL, SLIGHTLY HIGH
5. RPM – NORMAL

ACTIONS:

*1. **A/B** -- ENGAGE, MONITOR EXCESSIVE EGT

IF A/B DOES NOT LIGHTOFF: THROTTLE BACK TO MILITARY

*2. **STORES** -- JETTISON, EXCEPT MISSILES
*3. PERFORM FORCED LANDING PATTERN
4. **IF SAFE LANDING IS NOT ASSURED** – EJECT!

EXCESSIVE THRUST

EXCESSIVE THRUST

SYMPTOMS:

1. WHEN RETARDING THROTTLE:
   THRUST AND EGT REMAIN HIGHER THAN NORMAL
   NOZZLE REMAINS 1/4 TO 3/8

2. WHEN ADVANCING THROTTLE:
   RPM INCREASES SLOWLY TO 80 – 85% MAX. POSSIBILITY OF EXCESSIVE EGT AND SEVERE COMPRESSOR STALL

MEANING: **NOZZLE FAILED CLOSED**

ACTIONS:

*1. **THROTTLE** -- ABRUPTLY TO IDLE

IF NOZZLE RELEASED AND OPEN:

*2. **RPM L/U** -- MAN ON
3. RETURN TO LANDING. THROTTLE IN IDLE POSITION.,
4. **CIRCLE TO LAND** -- WITH RPM L/U ON PATTERN. AVOID THROTTLE MANIPULATION OVER 1/2 NOZZLE. **DO NOT OPEN A/B.**

IF NOZZLE REMAINS CLOSED:

1. **THROTTLE** -- OPERATE THROTTLE GENTLY.
   AVOID EGT ABOVE 670°C.

CIRCLE TO LAND

THRUST WITH NOZZLE CLOSED:

AT IDLE -- 80% OF NORMAL THRUST

AT 80 -- 90% OF NORMAL THRUST

1. PERFORM SAFETY CIRCLE TO LAND.
2. BE PREPARED FOR SUDDEN NOZZLE OPENING AND LOSS OF THRUST.
3. CALL FOR BARRIER.
4. AFTER TOUCHDOWN -- ENGINE CUTOFF

CAUTION!

A. USE OF A/B MIGHT CAUSE SEVERE DAMAGE TO ENGINE.

B. AIR START WITH CLOSED NOZZLE IS **NOT** CERTAIN.

C. GO-AROUND -- DECIDE AS EARLY AS POSSIBLE. ADVANCE THROTTLE GRADUALLY, MONITOR EGT.

NOZZLE OPERATES ON MECHANICAL SCHEDULE

SYMPTOMS:

1. EXCESSIVE EGT AT MILITARY AND A/B
2. NOZZLE CLOSED ABOVE NORMAL:
   A. AT MILITARY – 1/8
   B. AT MAX A/B – 3/4

MEANING: NOZZLE OPERATES ON MECHANICAL SCHEDULE

ACTIONS:

1. **A/B** -- OFF
2. **THROTTLE** -- REDUCE TO KEEP EGT BELOW 670°C
3. RETURN TO LANDING

WARNING

DO NOT OPEN A/B.

BUZZ AND ENGINE BANGS AT HIGH MACH

SYMPTOMS:

NOISES AND SIDE SLIP AT HIGH MACH – USUALLY ABOVE 1.7 MACH

ACTIONS:

*1. **A/B** -- REDUCE
*2. **AIRSPEED** -- REDUCE, STOP TURN
*3. **SPIKES** -- EXTEND MANUALLY UNTIL NOISES STOP

IF NOISES DO NOT STOP:

4. THROTTLE TO IDLE
5. **SPIKES** --OPERATE MANUALLY WITH MACH DROPPING, MAINTAIN SPIKE MACH SLIGHTLY HIGHER THAN A/C MACH (+0.1 MACH).

IF NOISES STOP:

6. **IN TRAINING FLIGHT** -- AVOID FLIGHT ABOVE 1.3 MACH.
7. **IN MISSION** -- CONTINUE AS PLANNED.
   SPIKES -- MONITOR AND OPERATE MANUALLY.

IN CASE OF FLAMEOUT OR RPM HANG UP:

1. **SPEED** -- REDUCE TO SUBSONIC
2. **SPIKES** -- CHECK IN
3. PERFORM AIRSTART:
   A. **AIRSTART BUTTON** -- ON
   B. **THROTTLE** -- OFF, ALLOW RPM TO DROP 3 - 5% AND BACK TO IDLE:

AFTER LIGHTOFF: (RPM STABILIZED ABOVE 65%)

C. RETURN TO LAND.

FAILURE OF ECS TURBINE AT HIGH MACH

SYMPTOMS:

1. SEVERE NOISE IN COCKPIT, VIBRATIONS, WHINING AND BANGING
2. SMOKE AND UNPLEASANT ODORS

HIGH MACH

ACTIONS:

*1. **THROTTLE** -- IDLE AND REDUCE SPEED
*2. **CABIN PRESSURE AND CABIN ALTITUDE** -- CHECK
*3. DESCEND IMMEDIATELY TO BELOW 30,000 FT (SPEED BRAKES)
*4. **OXYGEN** -- 100%

BELOW 20,000 FT:

5. **PRESSURIZATION** -- OFF
6. **RADAR AND HUD** -- OFF
7. **RAM AIR** -- OPEN (AT SPEED BELOW 450 KT)

NOTE

THIS MALFUNCTION MIGHT OCCUR IN ALL FLIGHT CONDITIONS.

RPM L/U JAMMED "ON"

SYMPTOMS:

WHEN REDUCING SPEED TO BELOW 1.2 MACH, THROTTLE BELOW MILITARY – RPM REMAINS MAX.
(RPM L/U LIGHT NOT NECESSARILY ON).

NOTE

MALFUNCTION MIGHT OCCUR AT SUBSONIC FLIGHT DUE TO ADC FAILURE AND CAUSE SPIKES MOVE OUT.

MEANING: **RPM L/U JAMMED "ON"**

ACTIONS:

*1. **RPM L/U SW** -- CHECK ON AUTO
*2. **THROTTLE** -- FIX POSITION
*3. **RPM L/U C/B** -- PULL OUT
4. **SPIKES** -- CHECK IN POSITION
   SPIKES PUSHBUTTON -- PULL OUT

IF RPM L/U IS RELEASED:

FLIGHT CAN CONTINUE BELOW 1.25 MACH

IF RPM REMAINS MAX:

3. **AIRSPEED** -- REDUCE TO 300 KT AND DESCEND FOR LANDING. THE RPM L/U MIGHT RELEASE BY ITSELF.

(Continued)

IF RPM REMAINS MAX UNTIL LANDING:

4. PERFORM LANDING PATTERN WITH RPM L/U ON:
   A. **THROTTLE** -- IDLE. (THE ACTUAL THRUST IS EQUAL TO 85% OF NORMAL ENGINE).
   B. **RPM L/U CB** -- VERIFY -- IN
   C. **RPM L/U SW** -- TO MAN. FOR SAFETY
   D. **FINAL APPROACH** -- LONG AND SHALLOW. ANTICIPATE EXCESSIVE THRUST, ADJUST SPEED AND ALTITUDE BY SPEED BRAKES AND TURNS. (NOT BELOW 200 FEET).
   F. **HORN** -- DISCONNECT
   G. **BARRIER** -- CALL
   H. **ENGINE** -- CUTOFF AFTER TOUCHDOWN

RPM L/U

NOTE

*A/B IS AVAILABLE

*USE THROTTLE TO CONTROL THRUST (NOZZLE)

LANDING GEAR AND UTILITY HYDRAULIC FAILURES

RETRACTING GEAR

SYMPTOMS:

AFTER SELECTING GEAR UP, GREEN LIGHTS (3) REMAIN ON.

ACTIONS:

1. **EMERGENCY LANDING GEAR LEVER** -- CHECK FULLY IN.
2. **"UTIL. PRESS" AND "U/C COMD" C/B** -- CHECK IN
3. **AIRSPEED** -- MAINTAIN 270 KT
4. IF "UTIL. PRESS" IS LOW "U/C COMD" C/B IS IN AND LANDING GEAR LEVER DOWN, CONTINUE WITH HYD 1 MALFUNCTION PROCEDURE.
5. IF "UTIL. PRESS NORMAL" AND "U/C COMD" C/B POPPED OUT -- PUSH C/B IN, MONITOR LANDING GEAR RETRACTION AND CONTINUE FLIGHT.
6. IF "UTIL PRESS NORMAL" AND "U/C COMD" C/B ARE IN -- LANDING GEAR LEVER DOWN, BURN EXCESSIVE FUEL, AND LAND.

SYMPTOMS:

AFTER GEAR RETRACTION – RED LIGHT REMAINS ON

MEANING: ONE (OR MORE) OF THE GEAR-DOORS NOT CLOSED AND LOCKED

ACTIONS:

1. **"UTIL ISO"** -- CONFIRM NOT IN "CLOSE" POSITION
2. **HYD. UTIL PRESS.** -- CHECK:
   A. IF PRESSURE NORMAL -- EXTEND GEAR NORMALLY, BURN EXCESSIVE FUEL AND LAND.
   B. IF PRESSURE IS LOW -- EXTEND GEAR IN EMERGENCY MODE. RETURN TO LANDING USING HYD 1 MALFUNCTION PROCEDURE:
      - CHECK THREE GREEN AND ONE RED LIGHT
      - LOWER THE NORMAL LANDING GEAR HANDLE
      [N] • BIP CHECK: **EMERGENCY GEAR HANDLE** -- IN AFTER BIP CHECK, PULL HANDLE BACK AND PULL "U/C COMD" C/B OUT.

L/G UTIL

GEAR EXTENSION

SYMPTOMS:

NO GREEN LIGHT INDICATION FOR MAIN GEAR (ONE OR BOTH). THE RED LIGHT IS ON.

MEANING: **MAIN LANDING GEAR NOT LOCKED DOWN**

ACTIONS:

1. **UTIL ISO** -- CONFIRM NOT IN "CLOSE" POSITION
2. **HYD UTIL PRESS** -- CHECK

IF PRESSURE IS LOW:

USE HYD 1 MALFUNCTION PROCEDURE.

IF PRESSURE IS NORMAL:

3. CHECK: "U/C UP" BLINKER AND BIP. PRESS TO TEST GEAR LIGHTS INDICATOR.

IF "U/C UP" BLINKS, THREE GREEN LIGHTS COME ON WITH TEST AND NO BIP TONE:

4. CALL FOR A CHASE FOR OUTSIDE INSPECTION. (CONSIDER ALSO TOWER INSPECTION).
5. **ROCK THE WINGS** -- PERFORM POSITIVE AND NEGATIVE ABRUPT "g"s AND SIDE SLIPS.
6. **AIRSPEED** -- INCREASE TO 350 KIAS AND TRY AGAIN.

(Continued)

IF NO CHANGE AND HYD UTIL PRESS. IS NORMAL:

7. **GEAR HANDLE** -- UP (PRESS GROUND SAFETY BUTTON ON TOP OF HANDLE BAY) – AND DOWN
   A. CONTINUE "UP AND DOWN" ATTEMPTS.
   B. AT THE SAME TIME CONTINUE TO ROCK THE WINGS, PULL AND PUSH POSITIVE AND NEGATIVE "g"s AND SIDE SLIPS.

IF NO CHANGE:

8. **EMEGENCY GEAR HANDLE** -- PULL, CHECK THREE GREEN AND ONE RED LIGHT, "U/C UP" BLINKER OFF AND NORMAL GEAR HANDLE DOWN.

[N] • BIP CHECK: **EMERGENCY GEAR HANDLE** -- IN. AFTER BIP CHECK PULL HANDLE BACK AND PULL "U/C COMD" C/B OUT.

9. IF THE CAUSE OF MALFUNCTION IS LOW UTIL PRESS: LAND USING "HYD 1" MALFUNCTION PROCEDURE.

IF NO CHANGE (GREEN LIGHT STILL OUT, U/C UP BLINKER BLINKS AND NO BIP TONE):

10. CONFIRM AGAIN BY OUTSIDE INSPECTION THAT GEAR IS NOT DOWN AND LOCKED.

WARNING

DO NOT LAND IF ONE MAIN LANDING GEAR IS NOT LOCKED DOWN.

11. **EJECT!**

(Continued)

SYMPTOMS:
ONE GREEN LIGHT IS NOT ON. THE RED LIGHT IS OFF.

MEANING: THE GREEN BULB IS BURNT.

ACTIONS:
1. **GEAR INDICATION LIGHTS** -- PRESS TO TEST. CONFIRM THE BULB DOES NOT LIGHT.
2. **"U/C UP" BLINKER** -- OFF AND ON WHEN PRESSED
3. **BIP** -- OPERATES
4. REPORT TO TOWER: "TWO GREENS, BURNT BULB, BLINKER OFF".
5. AFTER TOWER CONFIRMATION FOR LANDING GEAR CONDITION -- LAND NORMALLY.

SYMPTOMS:

MAIN GEAR GREEN INDICATION LIGHT BLINKS (ONE OR BOTH).

MEANING: MAIN GEAR LOCKED DOWN IN THE FORWARD POSITION.

ACTIONS:

1. **HYD UTIL PRESS.** -- CHECK NORMAL. (IF NOT – CONTINUE ACCORDING TO "HYD 1" MALFUNCTION PROCEDURE)
2. **ROCK THE WINGS** -- PULL AND PUSH "g"s, PERFORM SIDE SLIPS.
   - IF NO CHANGE: INCREASE AIRSPEED TO 350 KIAS AND DO IT AGAIN.

IF STILL NO CHANGE:

3. **EMERGENCY GEAR HANDLE** -- PULL. CHECK THREE GREEN LIGHTS AND ONE RED LIGHT COME ON STEADY.

[N] • BIP CHECK: **EMERGENCY GEAR HANDLE** IN. AFTER BIP CHECK PULL HANDLE BACK AND PULL "U/C COMD" C/B OUT.

IF NO CHANGE: (GREEN LIGHTS STILL BLINKING)

4. LAND NORMALLY
5. WHEN THE AIRCRAFT STOPS -- HOLD 80% RPM AND REMAIN SEATED IN THE COCKPIT. (THE NOSE TENDS TO RISE) UNTIL GROUND SUPPORT IS PROVIDED.

(Continued)

SYMPTOMS:

NO GREEN LIGHT INDICATION FOR NOSE GEAR. THE RED LIGHT IS ON.

MEANING: NOSE GEAR IS NOT LOCKED DOWN.

ACTIONS:

1. **HYD "UTIL" PRESS.** -- CHECK NORMAL (IF NOT - CONTINUE ACCORDING TO "HYD 1" MALFUNCTION PROCEDURE).
2. CHECK: "U/C UP" BLINKER, BIP, AND PRESS TO TEST GEAR LIGHTS INDICATOR.

IF "UP" BLINKS, THREE GREEN LIGHTS COME ON WITH TEST AND NO BIP TONE:

3. CALL FOR A CHASE FOR OUTSIDE INSPECTION (CONSIDER ALSO TOWER INSPECTION)
4. ROCK THE WINGS, PULL AND PUSH "g"s, PERFORM SIDESLIPS.

   IF NO CHANGE -- INCREASE AIRSPEED TO 350 KIAS AND TRY AGAIN.

(Continued)

IF NO CHANGE:

5. **EMERGENCY GEAR HANDLE** -- PULL.
   CHECK THREE GREEN AND ONE RED LIGHT.

IF STILL NO CHANGE:

6. **PERFORM "TOUCH AND GO"** -- TOUCH MAIN GEAR ONLY.

IF NOSE GEAR STILL UNLOCKED:

7. **EXTERNAL STORES** -- JETTISON EXCEPT MISSILES AND EMPTY FUEL TANKS.

8. LANDING:
   A. ASK FOR BARRIER AND REMOVAL OF SPACING ROLLERS FROM ARRESTING CABLE.
   B. **RADAR** -- OFF
   C. **AFTER TOUCHDOWN** -- CUT THE ENGINE
   D. LOWER THE NOSE UNDER CONTROL AT 120 - 130 KIAS
   E. AVOID USING WHEEL BRAKES.

EMERGENCY LANDING GEAR EXTENTION.

BEFORE SETTING NORMAL LEVER DOWN:

1. **EMERGENCY HANDLE** -- PULL COMPLETELY.
   TIME FOR EXTENDING GEAR IN EMERGENCY - 22 SEC
   (WITH FLAME OUT ENGINE - 70 SEC)
2. CHECK 3 GREEN AND ONE RED LIGHT
3. **NORMAL GEAR HANDLE** -- DOWN
4. **SPEED** -- MAINTAIN BELOW 270 KT.

BIP CHECK:

1. **NORMAL HANDLE** -- CHECK DOWN
[N] 2. **EMERGENCY HANDLE** -- PUSH COMPLETELY
3. **GREEN RADIO** -- CHECK OPERATION
4. **BIP BUTTON** -- PUSH TO CHECK
[N] 5. **EMERGENCY HANDLE** -- PULL BACK
6. **U/C CMND - C/B** -- PULL OUT FOR SAFETY

ENGINE CUT DURING TAKEOFF

ACTIONS:

* 1. BEFORE LIFTOFF: -- **ABORT**
   BARRIER -- CALL
* 2. AFTER LIFTOFF: -- **AIRSTART** - ON

IF THE ENGINE DOES NOT LIGHTOFF - EJECT!

WARNING

CRASH LANDING IS NOT PERMITTED.

ABORT

ACTIONS:

* 1. **THROTTLE** -- IDLE/CUTOFF
* 2. **DRAG CHUTE** -- DEPLOY
* 3. **WHEEL BRAKES** -- BRAKE HARD
* 4. **RADIO** -- REPORT
* 5. **BARRIER** -- CALL.

(Continued)

BARRIER ENGAGEMENT

MAX. SPEED LIMIT FOR BARRIER ENGAGEMENT IS 190 KIAS.

ACTIONS:

1. **THROTTLE** -- CUTOFF
2. **BARRIER** -- CALL
3. **EXTERNAL INFLAMMABLE STORES** -- JETTISON
   - MINIMUM DISTANCE FROM BARRIER FOR JETTISON – 1/3 RUNWAY

IF TIME AND CONDITIONS PERMIT:

4. **SEAT** -- DOWN
   VISOR -- DOWN
5. **NOSE WHEEL** -- ON THE RUNWAY
6. **BARRIER** -- ENGAGE SQUARELY
7. **WHEEL BRAKES** -- RELEASE UPON ENGAGEMENT
8. **BATTERY** -- OFF

WARNING

AFTER ENGAGEMENT BE PREPARED TO BREAK CANOPY WITH CANOPY BREAKER IF IMPOSSIBLE TO OPEN IT.

ENGINE CUT

SYMPTOMS:

LOSS OF POWER, RPM DROPS BELOW 65% , EGT AND F/F DROP.

MEANING: ENGINE CUT

IMMEDIATE ACTIONS:

*1. **AIRSTART** -- ON, MONITOR F/F, RPM, AND EGT

IF NO LIGHTOFF:

*2. **HEADING** -- TO THE NEAREST BASE, GLIDE AT 300 KIAS

*3. PREPARATIONS FOR AIRSTART:

A. **THROTTLE** -- CUTOFF

* B. **"LOAD REDUCT"** -- ON

C. **HUD, RADAR** -- OFF

D. **ECS** -- OFF (IN CASE OF SMOKE OR ODORS)

E. **RADIO** -- REPORT

*F. **FUEL** -- CHECK INDICATIONS AND WARNINGS

G. **SPIKES** -- IN

* H. **"START" C/B** -- IN

I. **EXTERNAL STORES** -- CONSIDER JETTISON ACCORDING TO ALTITUDE AND RANGE FROM FIELD.

BARRIER ENGINE CUT

AIRSTART

GUARANTEED ALTITUDE FOR AIRSTART: BELOW 25,000 FT

1. **AIRSTART** -- FORWARD
2. **THROTTLE** -- FORWARD AND BACK TO IDLE
3. **F/F, EGT AND RPM** -- MONITOR

AFTER START: (RPM STABILIZED ABOVE 65%)

1. **LOAD REDUCT** -- OFF
2. **ECS** -- ON
3. **STAB AUG** -- ENGAGE
4. **HUD** -- ON

IF NO LIGHTOFF, DOWN TO 13,000 FT:

1. **EXTERNAL STORES** -- JETTISON
2. CONTINUE AIRSTART ATTEMPTS IN 1/2 MINUTE CYCLES.
3. **THROTTLE** -- CUTOFF BEFORE TOUCHDOWN

RPM HANG UP DURING AIR START

SYMPTOMS:

1. RPM STUCK AT 70–80%
2. EXCESSIVE EGT
3. OPEN NOZZLE
4. ENGINE VIBRATIONS

MEANING: RPM HANG-UP DURING AIRSTART

ACTIONS:

* 1. **AIRSTART** -- CHECK ON
* 2. **THROTTLE** -- CUTOFF, ALLOW RPM TO DROP 3–5% AND ADVANCE THROTTLE TO IDLE

AFTER START UP:

SEE E-34 -- AFTER START

AIRSTART

FORCED LANDING

FORCED LANDING IS PERMITTED ONLY WITH GEAR DOWN AND ON JET APPROVED RUNWAY.

AOA FOR BEST GLIDING:

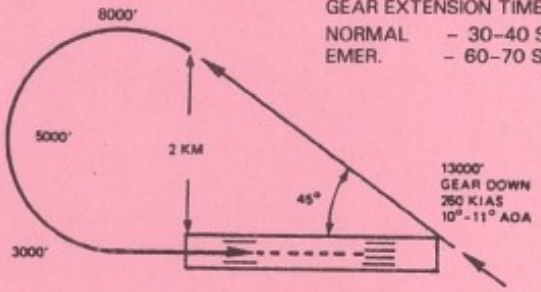
GEAR UP: 5°–6°, 300 KIAS

GEAR DOWN: 10°–11°, 260 KIAS

GEAR EXTENSION TIME:

NORMAL – 30–40 SEC

EMER. – 60–70 SEC



1. CHECK WIND
2. AIM TO LAND 1/3 RUNWAY OVERSHOOT
3. **BARRIER** -- CALL
4. **FLARE GRADUALLY** -- COMPENSATE FOR HIGH SINK RATE
5. **THRESHOLD SPEED** -- 220 KNOTS
6. BRAKE FIRMLY, DEPLOY CHUTE AT 180 KNOTS MAX.
7. AFTER STOPPING: – **"LOW PRESSURE" FUEL SHUTOFF** -- CLOSE .
   – **BATTERY** -- OFF
8. LEAVE THE AIRCRAFT.

NOTE

WHEN GLIDING (CLEAN CONFIGURATION) AT AOA OF 5–6°, THE AIRCRAFT COVERS 12 NM PER 10,000 FEET.

FIRE

ENGINE FIRE DURING START

SYMPTOMS:

1. FIRE WARNING LIGHT ON.
2. OUTSIDE REPORT.

ACTIONS:

* 1. **THROTTLE** -- CUTOFF
* 2. **LOW PRESSURE FUEL SHUTOFF** -- CLOSED
* 3. **BOOST PUMPS** -- OFF
4. **IGN/VENT SWITCH** -- VENT
5. **ELECTRICAL POWER SWITCHES** -- OFF
6. CONTINUE TO CRANK THE ENGINE FOR VENTILATION.
7. IF FIRE PERSISTS -- **LEAVE THE AIRCRAFT**

ENGINE FIRE DURING START FOLLOWING UNSUCCESSFUL START-UP

ACTIONS:

1. IF THE ENGINE HAS LIT UP:

   THROTTLE -- OPEN ABOVE 80%
   (TO REMOVE THE FLAMES).

FIRE DURING TAKEOFF

SYMPTOMS:

1. FIRE WARNING LIGHT – ON
2. SMOKE IN THE COCKPIT, HIGH EGT
3. OUTSIDE REPORT

ACTIONS:

* 1. ABORT TAKEOFF
* 2. **THROTTLE** -- CUTOFF
* 3. **EXTERNAL INFLAMMABLE STORES** -- JETTISON
4. LEAVE AIRCRAFT AS SOON AS PRACTICABLE.

IF COMMITTED TO TAKEOFF:

* 1. **THROTTLE** -- CLOSE TO MIL
* 2. **EXTERNAL STORES (EXCEPT 1300 FUEL TANKS)** -- JETTISON AND PROCEED WITH THE TAKEOFF.
3. IF THE FIRE PERSISTS IN AIR -- **EJECT!**

INFLIGHT FIRE

SYMPTOMS:

1. FIRE WARNING LIGHT – ON
2. SMOKE IN THE COCKPIT AND HIGH EGT
3. OUTSIDE REPORT.

ACTIONS:

* 1. **A/B** -- SHUT DOWN AND REDUCE RPM
* 2. **A/B SWITCH** -- OFF
* 3. **HEADING** -- TO THE NEAREST BASE FOR A FORCED LANDING
4. CONFIRM FIRE CONDITION

IF FIRE CANNOT BE CONFIRMED:

5. LAND AS SOON AS POSSIBLE USING MINIMUM PRACTICAL POWER.

(Continued)

IF FIRE IS CONFIRMED (OUTSIDE REPORT, SMOKE, TEMP):

1. **THROTTLE** -- CUTOFF, PROCEED TO FORCED LANDING PATTERN
2. **LOW PRESSURE FUEL SHUTOFF** -- CLOSED
3. **BOOST PUMPS** -- OFF
4. **ECS** -- OFF
5. **EXTERNAL STORES** -- JETTISON
6. **LOAD REDUCT** -- ON

IF FIRE EXTINGUISHED:

1. **FIRE WARNING LIGHT** -- PRESS TO TEST; IF IT DOES NOT COME ON, DO NOT RELY ON THE INDICATION.
2. PERFORM FORCED LANDING
3. DO NOT RESTART THE ENGINE

IF THE FIRE PERSISTS:

1. **EJECT** - - DO NOT LAND AN AIRCRAFT ON FIRE.

LOSS OF CONTROL AND SPIN

LOSS OF CONTROL

SYMPTOMS:

SUDDEN DEPARTURE IN YAW, COMBINED WITH PITCH AND ROLL OSCILLATIONS IS A CONSEQUENCE OF INADVERTENTLY EXCEEDING OF AOA LIMIT IN FLIGHT AT HIGH ANGLE OF ATTACK.

ACTIONS:

*1. **STICK & RUDDER** -- RELEASE TO NEUTRAL
*2. **PITCH TRIM** -- TRIM 1 SEC FORWARD
3. **SPEED BRAKE** -- RETRACT
4. **THROTTLE** -- LEAVE AS SET, IN CASE OF COMPRESSOR STALL - THROTTLE IDLE
5. WAIT FOR RECOVERY.

ATTENTION

LOSS OF CONTROL MAY SUSTAIN UP TO 2 TURNS, WITH POSSIBLE CHANGE IN YAW DIRECTION. ROLL OSCILLATION MIGHT BE OPPOSITE TO YAW DIRECTION.

CAUTION

DISORIENTATION MAY OCCUR.

RECOVERY INDICATIONS:

1. YAW STOPS. PITCH AND ROLL OSCILLATIONS DECREASE.
2. A/C ATTITUDE STABILIZES WITH NOSE DOWN.
3. AOA DECREASES. VOR & PEDAL SHAKER STOPS.
4. AT 180 KNOTS, PILOT REGAINS CONTROL.
5. RECOVER TO THE NEAREST HORIZON. DO NOT PULL OVER THE AOA LIMIT.

AT 10,000 FT AGL IF STILL UNCONTROLLED -- EJECT !

ERECT SPIN

SYMPTOMS:

1. SEVERE YAW COMBINED WITH MILD PITCH AND ROLL OSCILATIONS.
2. AOA INDICATOR AT MAX ("WHITE", 1600 Hz TONE AND PEDAL SHAKER)
3. SPEED – 100 KT OR BELOW.

NOTE

UNDER CERTAIN CIRCUMSTANCES AND WITH EXTERNAL STORES, THE YAW OSCILLATIONS COMBINE WITH SEVERE PITCH AND ROLL OSCILATIONS.

ACTIONS:

*1. **SPIN DIRECTION** -- IDENTIFY
   a. VISUAL ORIENTATION (VIEW)
   b. HUD – PIPPER POINTS IN OPPOSITE DIRECTION OF SPIN
   c. ADI – A/C SYMBOL MOVES INTO SPIN DIRECTION

*2. **STICK** -- SET FIRMLY INTO SPIN DIRECTION TO SPIN RECOVERY MARKS, SLIGHTLY FORWARD, AND WAIT FOR RECOVERY.

*3. **THROTTLE** -- GRADUALLY REDUCE TO IDLE.

4. **ASYMMETRIC EXTERNAL STORES** -- JETTISON

5. **ALTITUDE** -- MONITOR

RECOVERY INDICATION: (AFTER ABOUT 2 TURNS)

1. **YAW RATE** -- DECREASES
2. A/C STABILIZES IN NOSE DOWN ATTITUDE.
3. **ROLL RATE** -- INCREASES
4. **SPEED** -- INCREASES AT 150 KT AND RISING THE A/C RECOVERS
5. **SPEED** -- INCREASES

AT 150 KT AND RISING, THE A/C RECOVERS

6. **STICK** -- GENTLY NEUTRALIZE LATERALLY AND RECOVER TO THE NEAREST HORIZON. DO NOT EXCEED AOA LIMIT.

CAUTION

DURING SPIN, A COMPRESSOR STALL OR FLAME OUT MAY OCCUR

NOTE

UNDER CERTAIN CIRCUMSTANCES WITH THE CONTROL SET AT SPIN RECOVERY MARKS, PITCH AND ROLL OSCILLATIONS INCREASE WHILE YAW STOPS. IN SUCH A CASE, SET STICK TO NEUTRAL LATERALLY AND WAIT FOR DECREASING OF THE OSCILLATIONS AND INCREASING OF AIR SPEED. CONTINUE THE RECOVERY PROCESS.

AT 10,000 FT AGL IF STILL IN SPIN -- EJECT !

(Continued)

INVERTED SPIN

SYMPTOMS:

1. A/C INVERTED
2. SEVERE YAW
3. NEGATIVE g (OSCILLATION BETWEEN -1 AND 0)
4. AOA NEGATIVE, (INDICATOR "BLACK")

ACTIONS:

*1. **STICK** -- RELEASE TO NEUTRAL

*2. **SPIN DIRECTION** -- IDENTIFY
   a. VISUAL ORIENTATION (VIEW)
   b. HUD – PIPPER POINTS IN OPPOSITE DIRECTION TO THE SPIN
   c. ADI – A/C SYMBOL MOVES INTO SPIN DIRECTION

*3. **RUDDER** -- FULL APPLICATION OPPOSITE TO SPIN DIRECTION.

RECOVERY:

1. **STICK** -- GENTLY PULL TO NEAREST HORIZON, DO NOT EXCEED AOA LIMIT
2. CONTINUE ACCORDING TO SPIN RECOVERY PROCEDURE

AT 10,000 FT AGL IF STILL IN SPIN -- EJECT !

EJECTION

GROUND EGRESS

* 1. **CANOPY** -- OPEN (IF NECESSARY – JETTISON)

* 2. **LEG STRAPS** – RELEASE (LATCH ON THE LEFT SIDE OF SEAT)

* 3. **CONNECTOR** -- RELEASE

* 4. **MAIN HARNESS LATCH** -- OPEN

* 5. **DINGHY** -- RELEASE

6. **LEAVE THE AIRCRAFT**

NOTE

IF THE CANOPY DOES NOT OPEN – BREAK IT WITH THE CANOPY BREAKER.

EJECTION

PREFERABLE CONDITIONS: 10,000 FT, 200 KT

AIRSPEED/MACH LIMITS: 0 – 600 KNOTS/1.7 MACH

1. **SUN VISOR** -- DOWN
   AIRSPEED -- REDUCE
   } IF TIME AND CONDITION PERMIT
2. **LOWER EJECTION HANDLE** -- PULL WITH RIGHT HAND: LEFT HAND HOLDING RIGHT WRIST, HEAD AGAINST THE HEADREST.

(Continued)

(Continued)

AFTER CHUTE DEPLOYMENT:

3. **DINGHY** -- RELEASE

AFTER LANDING:

4. **MAIN HARNESS LATCH** --OPEN AND UNSTRAPPED

OVER THE SEA

1. **HELMET** -- THROW AWAY

AT LOW ALTITUDE:

2. **DINGHY** -- INFLATE (RELEASE AND PULL)
3. **MAE WEST** -- INFLATE (RELEASE AND PULL)

WHEN TOUCHING THE WATER:

4. **MAIN HARNESS LATCH** – RELEASE AND UNSTRAP
5. **CLIMB INTO THE DINGHY** – FROM THE LOWER SIDE.

EJECTION FAILURES

LOWER EJECTION HANDLE INOPERATIVE:

1. **UPPER EJECTION HANDLE** -- PULL.

(Continued)

BOTH EJECTION HANDLES INOP.

MANUAL BAILOUT:

* 1. **ALTITUDE** -- BELOW 15,000 FT IF POSSIBLE
* 2. **GUILLOTINE** -- PULL (LEFT HAND)
* 3. **CANOPY** -- JETTISON (LEFT HAND)
  4. **TRIM** -- FORWARD AND **BAIL OUT**
* 5. **IN THE AIR: PARACHUTE** -- OPEN (RIGHT HAND)

BAROMETRIC PILOT/SEAT SEPARATION INOP. (BELOW 10,000 FT)

ACTIONS:

* 1. **GUILLOTINE** -- PULL AND PUSH BODY OUT OF THE SEAT (LEFT HAND)
* 2. **PARACHUTE** -- OPEN (RIGHT HAND)

DRAGCHUTE FAILURE

SYMPTOMS:

1. AFTER DRAGCHUTE DEPLOY NO DECELERATION FEEL.
2. EXTERNALLY INFORMED OF A DRAGCHUTE FAILURE.

ACTIONS:

IF PRACTICAL:

1. GO AROUND
2. **DRAGCHUTE LEVER** -- FORWARD

IF NOT PRACTICAL TO GO AROUND:

1. **ENGINE** -- IDLE/CUT OFF AT PILOT DISCERTION
2. MAINTAIN RUNWAY SIDE IN CORROLATION WITH A/C AHEAD.
3. **BRAKING** – AERODYNAMIC BRAKE DOWN TO 130 KT THEN LOWER NOSE AND BRAKE FIRMLY.

AFTER GO AROUND PERFORMED:

1. **LANDING GEAR** -- DO NOT RETRACT
2. BURN FUEL DOWN TO 600 LITERS

LANDING:

1. **BARRIER** -- ORDER TO ERECT (IF AVAILABLE)
2. **AURAL WARNING** -- OFF
3. MAINTAIN CORRECT THRESHOLD SPEED AND ALTITUDE.
4. IF HEAD WIND COMPONENT BELOW 10 KT – AFTER TOUCH DOWN ENGINE IDLE/CUT OFF AT PILOT DISCERTION.
5. **BRAKING** -- AERODYNAMIC BRAKE DOWN TO 130 KT THEN LOWER NOSE AND BRAKE FIRMLY.

KFIR F-21A

DATA & LIMITATIONS

1 ENGINE LIMITS

2 OPERATIONAL AND FLIGHT LIMITATIONS

3 STORES JETTISON

4 "g" LIMITS

CHANGES		
CHANGE NO.	**DATE**	**PAGE NO.**
4	9/88	D-2, D-3, D-4, D-5

1. **ON GROUND**

INDICATION / CONDITION	EGT(°C)	RPM(%)	OIL PRESS (PSI)	F/F (LPM)	NOZZLE
START	705 Ⓐ			4 (min)	
IDLE	250-540	66-68	12 min	8-15 Ⓑ	5/8-7/8
MIL	693 Ⓒ	103 Ⓔ	35-65 Ⓓ	70-85	1/3-3/8 Ⓕ
MAX A/B	693 Ⓖ	103 Ⓖ	35-65	70-85	5/8-7/8
TRANSIENT	763	104	100 Ⓗ		
FLACTUATION	MIL±5 A/B ±10	±0.2	±2.5		

2. **IN FLIGHT**

INDICATION / CONDITION	EGT(°C)	RPM(%)	OIL PRESS (PSI)	F/F (LPM)	NOZZLE
MIL/A/B Ⓘ	693	103	30-65	66-104	1/3-3/8 5/8-7/8

CHART REFERENCES

Ⓐ **START**

- EGT OFF 733-750°C IS LIMITED TO 90 SEC MAX. ABOVE THESE LIMIT – STOP START, DO NOT ATTEMPT A RESTART.
- EGT OF 705-732 WHICH NOT EXCEED THE ABOVE LIMIT, REQUIRED POST FLIGHT MAINT. REPORT.

(CONTINUED)

Ⓑ **FUEL FLOW**

- STARTING – 4 LPM MINIMUM.
- ABRUPT THROTTLE MOVEMENT TO IDLF. 4 LPM MINIMUM
- MAX F/F FOR ENGINE LIGHT OFF – 11.5 LPM.
- MAX F/F FOR LIGHT OFF THROUGH IDLE – 23 LPM.

Ⓒ **EGT**

- ANY STEADY EGT > 693°C FOR TIME >3 SEC. MUST BE REPORTED.
- EGT OF 694-729°C IS LIMITED TO 5 MIN. MAX.
- EGT OF 730-763°C IS LIMITED TO 1 MIN MAX.

Ⓓ **OIL PRESS**

- -10/+5 PSI FROM PLACARD AT MIL PWR (100% RPM). ADD 1 PSI FOR EACH 1% LESS THAN 100% RPM.

Ⓔ **ENGINE ACCELERATION**

- 10 SEC MAX. IDLE TO F/F DROP INDICATION.

Ⓕ **NOZZLE**

- NOZZLE POSITION IS A REFERENCE INDICATION ONLY, AS LONG AS OTHER ENGINE PARAMETERS ARE WITHIN LIMIT.

Ⓖ **AFTER BURNER**

- ALLOWABLE 4% RPM DROP AT A/B IGNITION BUT NOT LESS THAN 87%. RPM SHOULD STABILIZE WITHIN 12 SEC.
- TIME DELAY FOR A/B IGNITION – 4 SEC MAX:
- AT A/B IGNITION – EGT OF 763°C FOR 3 SEC MAX IS PERMITED.

(CONTINUED)

(H) – AT ENGINE START IN LOW O.A.T, OIL PRESS OF 100 PSI IS PERMITED.

(I) **MAX PWR (MIL-A/B)**

- ZERO/NEGATIVE g
  MIL PWR – 10 SEC MAX.
  A/B – 5 SEC MAX.
- MAX 30 MIN BELOW 35,000 FT.
- GRADUALLY REDUCE POWER AT HIGH SPEED IN ORDER TO PREVENT SHARP RPESSURE INCREASED IN THE JET PIPE.

OIL QUANTITY

- PRE START – MIN 28 PINT
- INFLIGHT – 24±4 PINT. (STEADY LEVEL FLIGHT).
- AT NEGATIVE g AND/OR EXTREME NOSE HIGH ATTITUDE, A LOW OIL QUANTITY INDICATION AND OIL QTY WARNING LIGHT IS POSSIBLE.

MINIMUN SPEED

1. FOR ENGINE ACCELERATION (LEVEL FLIGHT g=1):
   A. **UP TO 35,000 FT** –– 150 KT
   B. **ABOVE 35,000 FT** –– 200 KT

2. THROTTLE FIXED (ALL SETTINGS), UP TO MAX. AOA:
   A. **BELOW 30,000 FT** –– 120 KT
   B. **30,000 – 45,000 FT –– 150 KT**
   C. **ABOVE 45,000 FT** –– 175 KT

(Continued)

OPERATIONAL AND FLIGHT LIMITATIONS– CLEAN CONFIGURATION

CEILING

1. **NORMAL EQUIPMENT** – 50,000 FT
2. **WITH HIGH ALTITUDE EQUIPMENT** – 75,000 FT

MAX AIRSPEED/MACH

1. **BELOW 25,000 FT** –– 750 KIAS
2. **FROM 25,000 FT TO 30,000 FT** –– 710 KIAS OR MACH WARNING LIGHT ON
3. **ABOVE 30,000 FT:**
   - 710 KIAS OR MACH 2.2
   - FLIGHT LIMITATIONS PERMIT CONTINUING 0.2 MACH ABOVE MACH WARNING LIGHT ON OR

     2 MIN FROM MACH WARNING LIGHT ON, WHICHEVER COMES FIRST.

NOTE

ON RAPID CLIMB, DECREASE MACH LIMITS BY 0.1 MACH DUE TO ANEMOMETRIC DELAYS.

(Continued)

ROLL LIMITATION

1. CLEAN CONFIGURATION WITH 2 AIR TO AIR MISSILES:
   A. SUBSONIC: UP TO $^{2}/_{3}$ AILERON DEFLECTION
   B. SUPERSONIC: UP TO $^{1}/_{2}$ AILERON DEFLECTION
   C. LIMITS: SUBSONIC ROLL -- 0 - 5 g
      SUPERSONIC ROLL -- 0 - 2 g

2. WITH EXTERNAL STORES:
   A. SUBSONIC ROLL
   B. SUPERSONIC ROLL
   $^{1}/_{2}$ AILERON DEFLECTION

3. AOA LIMITS IN ROLL (RPO - ROLL PULL-OUTS)
   A. **CLEAN CONFIGURATION** -- AOA AURAL WARNING TONE CHANGES FROM 400 TO 800 Hz.
   B. **WITH EXTERNAL STORES** -- START OF AURAL WARNING TONE (400 Hz)
   C. **DURING FAST ROLL** -- DO NOT INCREASE AOA

CROSS WIND LIMITATION ON LANDING

1. **CLEAN CONFIGURATIOIN** -- 25 KT
2. **WITH EXTERNAL STORES** -- 20 KT

(Continued)

VARIOUS LIMITATIONS

1. **NOSE WHEEL ON GROUND** -- 185 KIAS MAX:
2. LANDING GEAR:
   A. **MAX. EXTENSION AND RETRACTION SPEED** - 270 KIAS
   B. **GEAR DOWN AND LOCKED (DOORS CLOSED)** - 300 KIAS

RAM AIR OPERATION

1. **ALTITUDE** - BELOW 20,000 FT
2. **AIRSPEED** - BELOW 450 KIAS

DRAG CHUTE

1. **DEPLOY** - 180 KIAS MAX (160 KIAS RECOMMENDED)
2. **RELEASE** - 190 KIAS MAX.

MAX. EJECTION SPEED - 600 KIAS/1.7 MACH

MAX. SUPERSONIC DIVE ANGLE - 30°

MAX. GROSS WEIGHT

1. **TAKEOFF** – 14,700 KG

5. **LANDING** – 11,600 KG

INTENTIONAL SPIN – PROHIBITED.

STORES & FUEL TANKS
JETTISON RESTRICTIONS

FUEL TANKS

1. JETTISONING OF EMPTY TANKS IS PREFERABLE.

2. *DO NOT JETTISON:*
   A. IN CLOSED FORMATION OR IN TRAIL.
   B. IN DESCENT, DIVE, DECELERATION AND NEGATIVE "g".
   C. WITH AIRBRAKES (SPEED BRAKES) EXTENDED.
   D. WITHOUT PITCH DAMPER AT SPEED ABOVE 500 KIAS.

(Continued)

DROP TANK JETTISON LIMITS

DROP TANKS	FUEL QTY	MINIMUM SPEED/MACH	MAXIMUM SPEED/MACH	NOTES
825 LITER UNDER FUSELAGE	NO LIMIT	250	630/1.2	
1300 LITER UNDER WINGS	FULL	250	300	
	IN TRANSFER OR EMPTY	300	530/092	
WARNING! DO NOT JETTISON AT TRANSONIC SPEED (0.9 – 1.03M)				

JETTISON "g" LIMITS

FUEL TANKS	FUEL QUANTITY	"g"
1300, 825	NO LIMIT	+1

SPEED AND "g" LIMITS

STORE	FUEL QUANTITY	MAX SPEED	MAX "g"	NOTES
CLEAN CONFIGUR-ATION		710 /750 / 2.2	+6.7 -3.5	
1300 TANKS WINGS	IN TRANSFER EMPTY	650 / 1.3 700 / 1.3	+5 -2.5 +6.7 -3	
825 TANKS	IN TRANSFER EMPTY	710/750/2.2	+6 -2.5 +6.7 -3.5	

SPEED AND "g" LIMITS (Con)

STORE	FUEL QUANTITY	MAX SPEED	MAX "g"	NOTES
SIDEWINDER		710 / 750 / 2.0	+6.7 -3.5	

ENGINE TAKE OFF LIMITS

CIT (°C)	RPM % (±1%)	EGT (°C)
0°	95.5	654 – 691
5	96	667 – 693
10	96.5	677 – 693
15	97	677 – 693
20	97.5	674 – 693
25	98	667 –693
30	98.5	662 – 691
35	99	657 – 686
40	99.5	652 – 681
45	100	646 – 676

NOTE:

$$95.5 + \frac{C}{10} \pm 1 = \text{RPM}$$